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Wong

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(54) **DEVICE FOR HOLDING SMALL DENTAL PARTS**

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A61C 19/02	(2006.01)
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A61C 1/14	(2006.01)
A61B 19/02	(2006.01)
A61C 19/00	(2006.01)

(52) **U.S. Cl.**

CPC ***A61C 3/04*** (2013.01); *A61B 19/0256* (2013.01); *A61B 2019/0258* (2013.01); *A61C 1/14* (2013.01); *A61C 19/001* (2013.01); *A61C 19/02* (2013.01); *B25H 3/06* (2013.01); *Y10T 29/49826* (2015.01)

(58) **Field of Classification Search**

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USPC ..... 206/63.5, 350, 368, 369, 572, 379, 370, 206/558, 564, 570, 438, 372, 576; 433/77, 433/300, 164, 49, 50; D24/176, 177, 229, D24/227; 248/309.4; 211/126.1–126.16, 211/85.13, 60.1, 70.6, DIG. 1; 335/285

See application file for complete search history.

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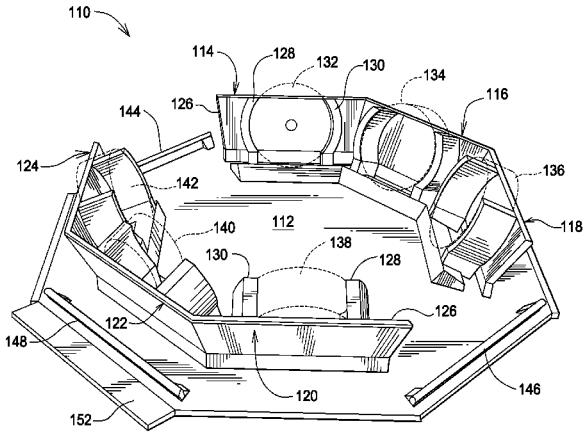
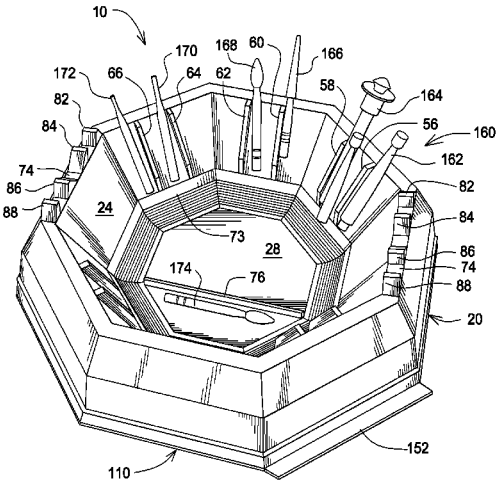
(57) **ABSTRACT**

A device for holding small dental parts may include a bowl member having central recess defined by a recess wall that has an inner surface adapted to engage dental parts and an outer surface. A plurality of magnets may be arranged around the recess wall and may be position adjacent to the outer surface of the recess wall. Also, a magnetic bowl system, which provides a bowl member that is disposable to avoid cross contamination and a separate magnet holder member that is reusable.

6 Claims, 4 Drawing Sheets





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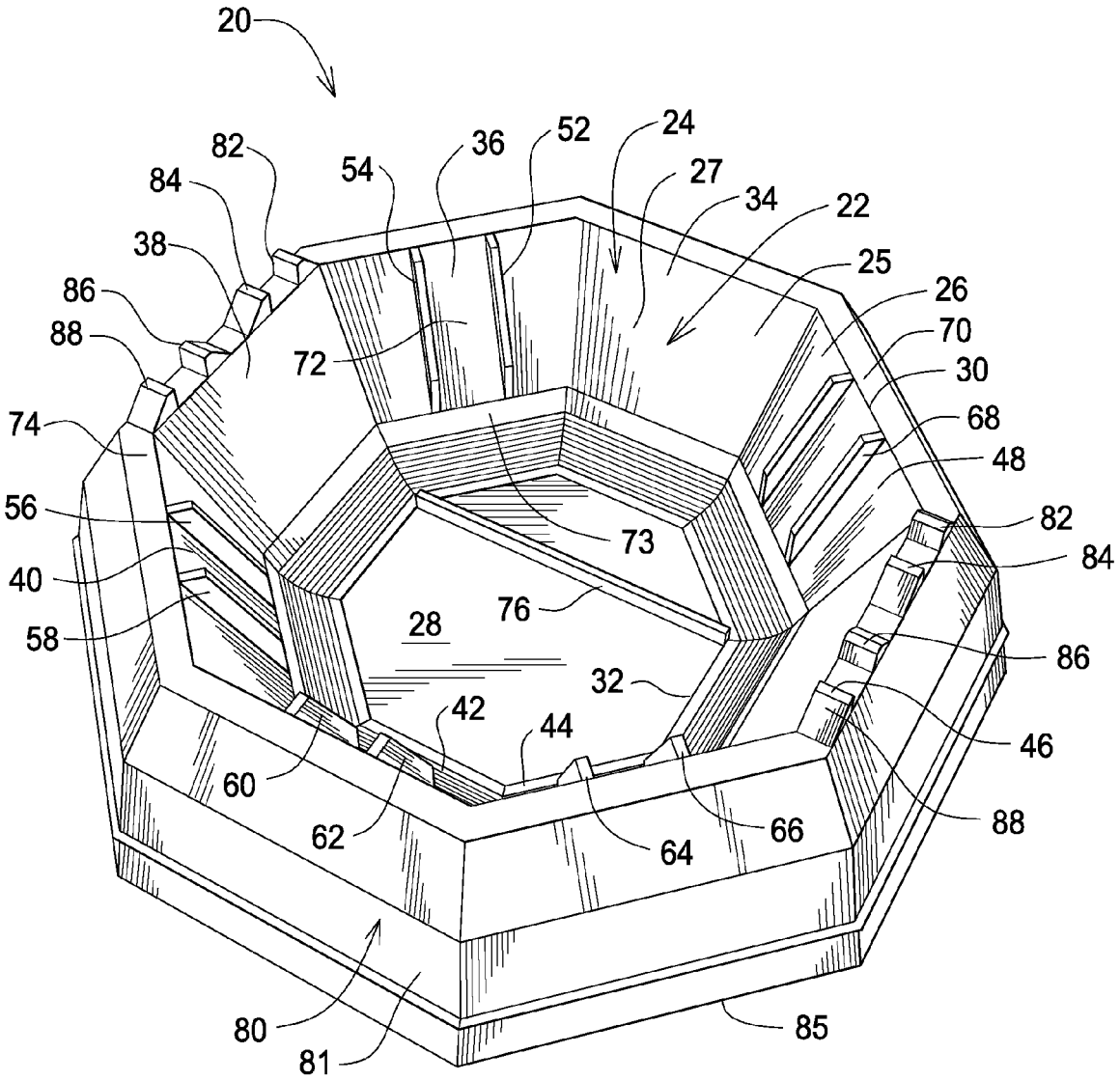
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FIG.1

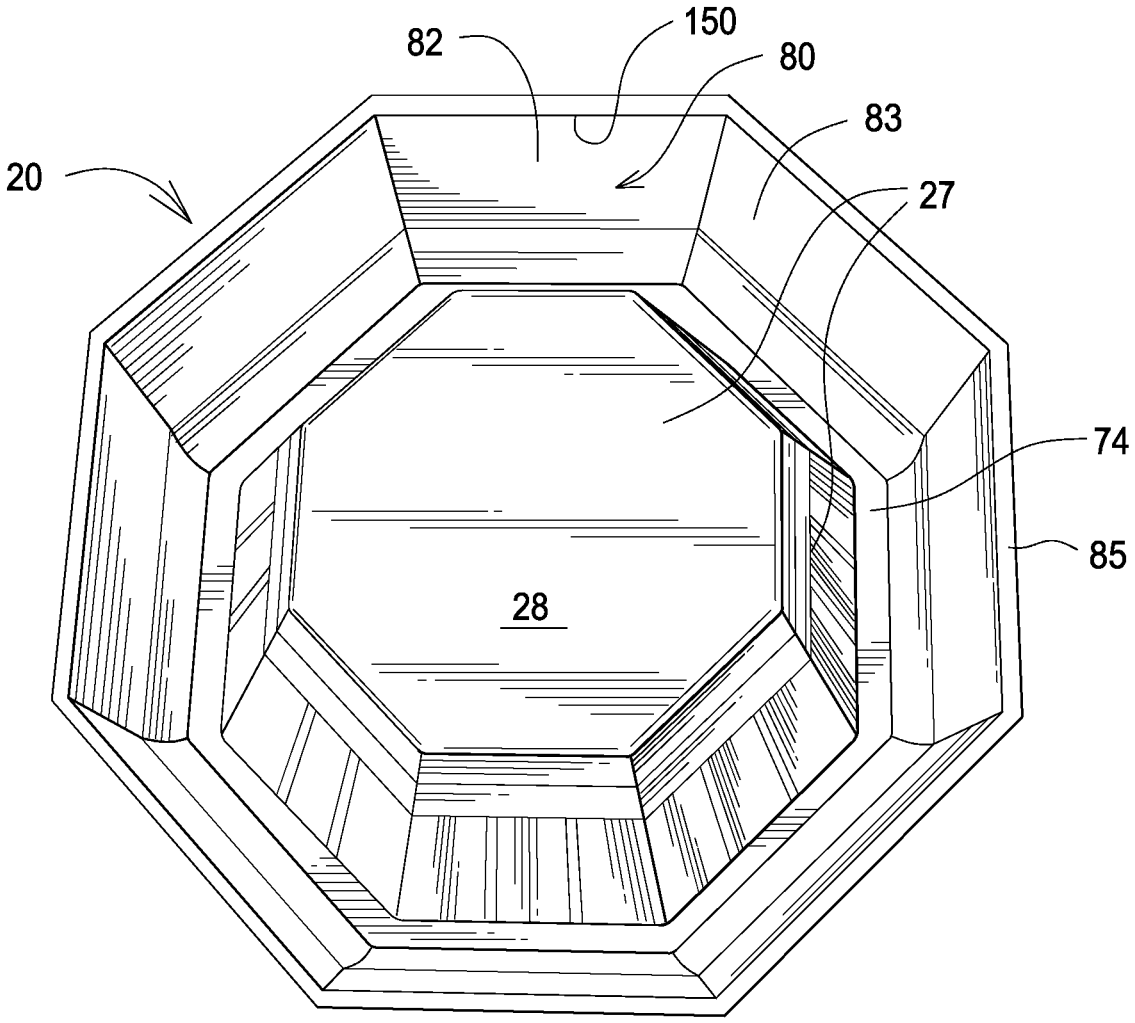

FIG.2

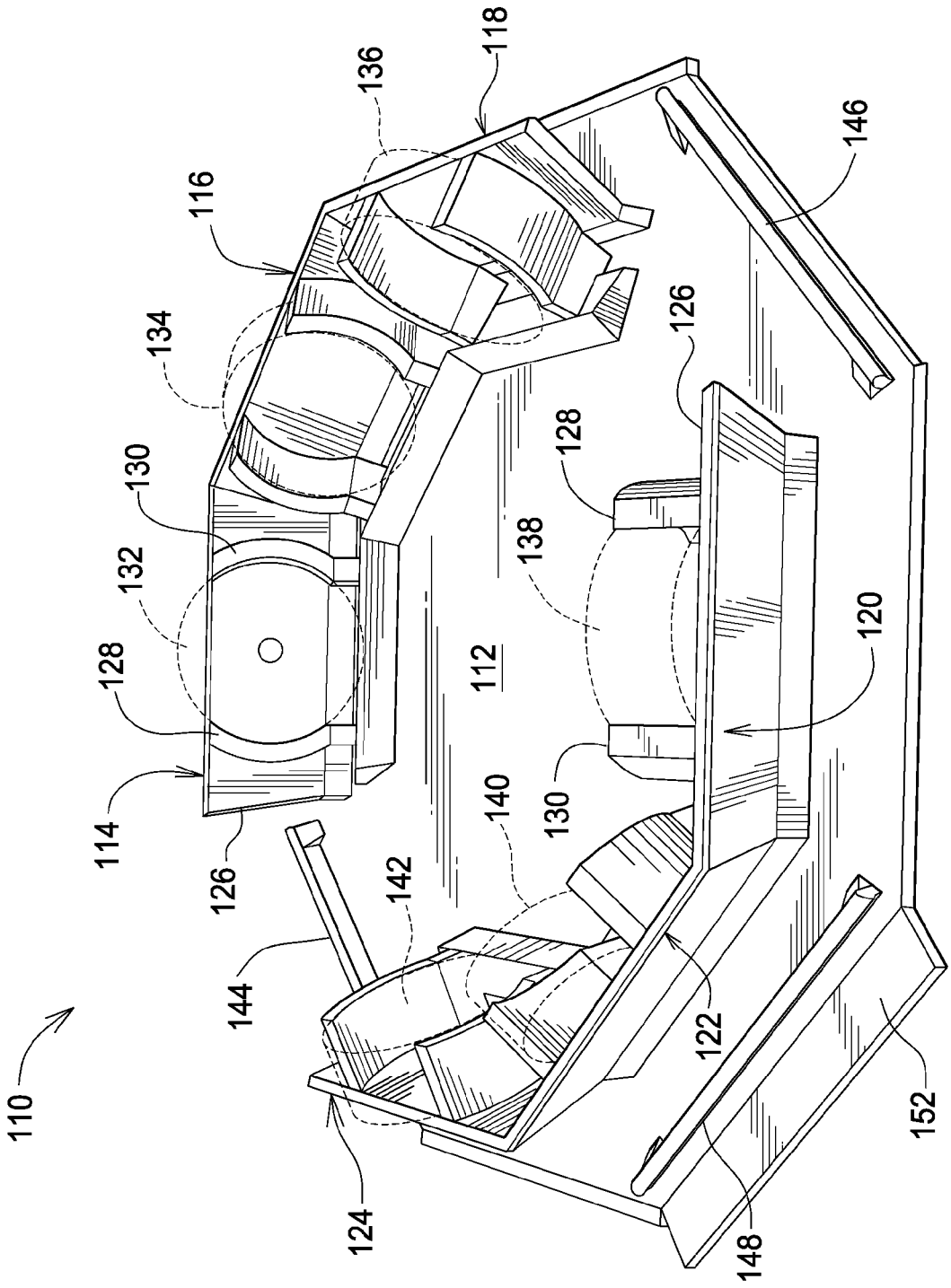
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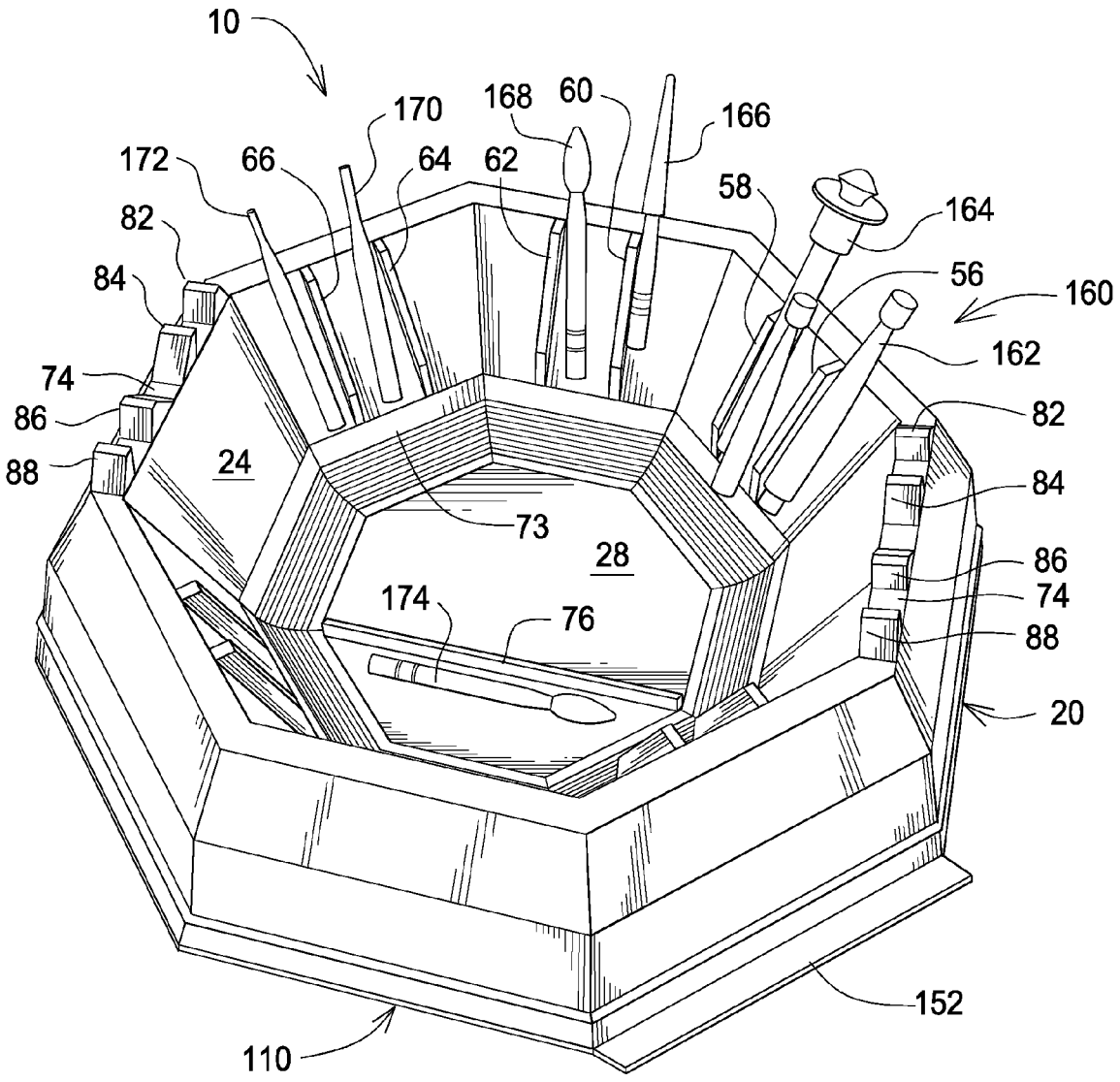
FIG.3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152
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FIG.4

DEVICE FOR HOLDING SMALL DENTAL PARTS

BACKGROUND

Many dental procedures require a dentist to use several different dental instruments and other small dental parts. For example, the procedure of crowning a tooth typically requires a dentist to use the following small dental parts: various carbide burs, diamond burs, mandrels, and disks, rubber points of various sizes, latch burs, finishing burs and finishing disks, mini micro brushes for peridex, etch, and bonding agents. For an implant procedure the following small parts are usually required: implant screws, implant abutments, transfer copings, and implant torque wrench and latch. Keeping such dental instruments and other small parts organized and readily available to the dentist, even with the help of a dental assistant, is an ongoing challenge.

SUMMARY

A device for holding small dental parts is described. The device includes a bowl member having a central recess defined by a recess wall. The recess wall has an inner surface, which engages the small dental parts. The recess wall also has an outer surface with a plurality of magnets positioned adjacent to it and arranged around it. Magnetic force holds small dental parts made from magnetic material against the inner surface of the recess wall.

The recess wall may have a flat bottom portion and a sloped sidewall portion. The sidewall portion is divided into a number of sections. The magnets may be positioned adjacent to several of the sections of the sidewall portion. The bowl member may also have a top rim surface with spaced apart teeth thereon that are adapted to receive and hold larger ones of the small dental parts. The teeth may be positioned adjacent to sections of the sidewall portion that do not have magnets near them.

The magnets may be supported by a magnet holder member, which is separate from the bowl member. The magnet holder member may be constructed such that it is readily attachable to and detachable from the bowl member. Because a magnet holder member is attached to a surface of a bowl member that is on the side opposite to the side that receives the small dental parts, there is no risk of contaminating the support plate with the small dental parts so long as the bowl member remains attached to the magnet holder member. Thus, the magnet holder member may be reused. Since the bowl member receives the small dental parts, it must be sterilized or discarded after every use. For a typical dental practice, only a small number of the relatively expensive magnet holder members are needed as compared to the number of relatively inexpensive bowl members. The bowl members are designed with tapered walls and have a nesting configuration that allows a large number of bowl members to be stacked to conserve space.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a top isometric view of a bowl member of a device for holding small dental parts.

FIG. **2** is a bottom isometric view of the bowl member of FIG. **1**.

FIG. **3** is a top isometric view of a magnet support plate.

FIG. **4** as a top isometric view of the device of FIG. **1** holding a plurality of small dental parts.

DETAILED DESCRIPTION

As used herein, spatial reference terms such as up, down, bottom, top, vertical, horizontal, lateral, left, right, etc., are used in a relative sense for establishing a frame of reference used for describing the spatial relationship between objects or various parts of an object. They are not used in an absolute sense that implies the orientation of an object in a field of gravity. Using the term "top" in this relative sense with a table that is described as having "a top surface that supports a computer" such surface would be correctly referred to as the "top surface" of the desk even if the desk were flipped upside down or resting on its side.

FIG. **1** shows a bowl member **20** of a dental tool holder **10**, FIG. **4**. The bowl member **20** has a central recess **22** that is defined by a recess wall **24**. The recess wall **24** has an inner surface **25** and an outer surface **27**, FIG. **2**. The inner surface **25** has a downwardly and inwardly sloping portion **26** and a horizontally disposed portion **28**. The recess wall **24** may have a polygonal upper edge **30** and a corresponding polygonal bottom edge **32**. The distance between opposite sides of the octagonal bottom edge **32** may be about 27.7 mm. The downwardly and inwardly sloping wall portion **26** may comprise eight trapezoidal wall sections **34** extending between the upper and bottom edges **30**, **32**. A plurality of upwardly extending rib pairs: **52**, **54**; **56**, **58**; **60**, **62**; **64**, **66**; and **68**, **70**, are provided on wall sections **36**, **40**, **42**, **44**, and **48**, respectively. These rib pairs may be provided to separate small dental parts or tools that lie against the inner surface **25** of the downwardly and inwardly sloping portion **26**. The ribs may each have a length of about 14.0 mm. A gap **72** may be provided between each pair of ribs e.g. **52**, **54**. The gap distance of each gap **72** may be about 5.4 mm. A lower horizontal rim **73** may extend around the inner surface **27** near the bottom of each of the ribs **52**, **54**, etc.

A laterally extending bottom rib **76** may be provided on the inner surface **25** of the horizontally disposed bottom portion **28** of the recess wall **24**. The purposes of the rib **76** are described in detail below.

An upper horizontally disposed wall **74** may be integrally formed at the top edge **30** of the recess wall **24**, as shown in FIGS. **1** and **2**. The upper horizontally disposed wall **74** may have an octagonal ring shaped configuration with a ring width about 2.5 mm. Wall **74** integrally connects the recess wall **24** to a generally downwardly and outwardly extending skirt shaped flange **80**. The flange **80** has a first surface **81**, FIG. **1**, and an opposite second service **83**, FIG. **2**. The flange **80** terminates in an octagonal bottom edge portion **85**, as best shown in FIG. **2**. Edge portion **85** may lie in substantially the same plane as the outer surface **27** of the horizontally disposed portion **28** of the recess wall **24**. The flange **80** substantially increases the width of the bowl member **20**, increasing its stability. In one embodiment the length of each side of the octagonal bottom rim **85** may be about 27.7 mm. In one embodiment the entire bowl member **20** is constructed from a resilient plastic material such as a thermoforming grade of high impact polystyrene.

FIG. **3** illustrates a magnet holder member **110**. The magnet holder member **110** includes a generally octagonal plate **112**. A plurality of magnet backing plates **114**, **116**, **118**, **120**, **122**, **124** are mounted on the octagonal plate **112** and are inclined upwardly and outwardly at the same angle as the sidewalls of the trapezoidal wall sections **34**, **36**, **38**, etc., of the bowl member **20**. A pair of arcuate brackets **128** and **130** are attached to each backing plate **114**, **116**, etc. Disc shaped magnets **132**, **134**, **136**, **138**, **140**, **142**, are supported by each

pair of brackets **128**, **130**. In one embodiment each magnet has a diameter of about 10 mm and an axial length of about 4.3 mm.

Ribs **144**, **146** and **148** (only three of four are visible in FIG. **3**) are arranged around a peripheral portion of the octagonal plate **112**. Referring to FIG. **2**, an inwardly extending peripheral lip **150** extends around the second surface **83** of skirt portion **80**. The ribs **144**, **146**, etc., FIG. **3**, each have an upper edge portion that co-acts with the lip **150** to provide a snap-fit relationship. When the bowl member **20** is positioned above the octagonal magnet holder member **110** with the respective peripheries aligned, downward pressure on the bowl member **20** causes the ribs **144**, **146**, etc., to snap into a locking relationship with the lip **150**. The bowl member **20** is thereby held in fixed relationship with the magnet holder member **110**. An integrally formed foot portion **152** extends laterally outwardly from the octagonal magnet holder member **110**. This foot portion **152** may be grasped to facilitate prying removal of the magnet holder member **110** from the bowl member **20**.

FIG. **4** illustrates the small dental parts holding device **10** with a plurality of dental instruments **160** supported on the recess wall **24**. The dental instruments may include individual instruments **162**, **164**, **166**, **168**, **170**, **172** supported on the inner surface **25** of recess wall **24** between the ribs **56**, **58**, etc. Longer dental instruments, not shown, may be supported on the horizontal wall surface **74** between opposed upwardly projecting teeth **82**, **84**, **86**, **88** on diametrically opposed sides of the bowl member upper horizontally disposed wall **74**. (In another embodiment, the teeth project downwardly rather than upwardly. In yet another embodiment the teeth are replaced by oppositely positioned, downwardly concave surfaces portions in the horizontal wall surface **74**.) A used drill bit **174** is positioned in the smaller section of the horizontally disposed portion **28** adjacent to rib **76**. Material removed from a patient's mouth, such as a crown (not shown) may be positioned on the other side of rib **76**. The rib **76** serves a number of purposes. One purpose is to separate burs. Some burs can be reused while others need to be discarded. The rib **76** separates the burs and organizes reusable burs. The rib **76** can also separate the central recess **22** into one side with adjacent magnets **132**, **134**, etc., and a second side with no adjacent magnets. The magnets **132**, **134**, etc., can be used to keep burs to be reused in a vertical stack for easy retrieval. The non-magnet side can be used to hold discarded burs. The rib **76** can also be used to separate implant screws from implant abutments. The purpose of the rib **76**, generally, is to create more options for better organization of small dental parts.

It may be seen from FIGS. **1** and **2** that the bowl member **20** has a stackable shape that allows a plurality of identical bowl members **20** to be nested together in a compact, space saving relationship. The two part construction of the device **10** enables a dentist to buy and keep on hand only a relatively few of the reusable and relatively expensive magnet support members **110**. This is because the magnet support members **110** ordinarily do not come into contact with the small dental Instruments **160** or dental artifacts from a patient's mouth. Such items are placed in the bowl members **20**, which are relatively inexpensive and may thus be discarded after use by each patient.

While illustrative embodiments of a device for holding small dental parts have been described in detail herein, it is to be understood that the inventive concepts disclosed may be otherwise variously embodied and employed and that the appended claims are intended to be construed to include such variations except insofar as limited by the prior art.

What is claimed is:

1. A device for holding small dental parts comprising:

a bowl member having a central recess defined by a recess wall with an inner surface adapted to engage dental parts and an outer surface, said recess wall comprising a generally downwardly and inwardly sloping portion and a generally horizontally disposed portion connected to said downwardly and inwardly sloping portion, said generally downwardly and inwardly sloping portion comprising polygonal upper and lower edges with a plurality of generally flat trapezoidal wall sections extending between said upper and lower edges; and a generally downwardly and outwardly extending flange connected to said recess wall by an outwardly extending wall with projecting teeth adapted to receive dental parts therebetween, said bowl member having a shape that facilitates nestingly stacking multiple members identical to said bowl member; and

a plurality of magnets arranged around said recess wall in adjacent relationship with said outer surface thereof wherein said plurality of magnets are aligned with different ones of said generally flat trapezoidal wall sections and are supported by arcuate magnet holder brackets on a magnet support member that is readily engageable with and disengageable from said bowl member.

2. The device of claim **1** wherein said arcuate magnet holder brackets comprise a first bracket adapted to engage a first peripheral portion of a cylindrical magnet with a portion of said magnet extending above said first bracket and a second bracket adapted to engage a second peripheral portion of said cylindrical magnet with a portion of said magnet extending above said second bracket.

3. The device of claim **1** wherein said arcuate magnet holder brackets are mounted on a plurality of magnet backing plates.

4. The device of claim **3** wherein said magnet backing plates slope upwardly and outwardly from a horizontally disposed plate portion of said magnet support member.

5. The device of claim **3** wherein said magnet backing plates extend generally parallel to corresponding ones of said plurality of generally flat trapezoidal wall sections of said bowl member.

6. The device of claim **1** wherein said bowl member generally and outwardly extending flange comprises a peripheral lip and wherein said magnet support member comprises a plurality of ribs that co-act with said peripheral lip to selectively attach and detach said bowl member and said magnet support member.

* * * * *